

provocation can be reduced by apocynin. However, the protein expression of NADPH oxidase's subunit, p22phox and gp91phox have no significant difference among all the groups. Regarding the MAPK pathway, the phosphorylation level of JNK 1 and p38 are up-regulated and apocynin can reduce the protein expression levels of their phosphorylation ( $P<0.01$ ). The downstream fibrosis-related protein MMP9 is over-expressed by up-mentioned stimulation and can be reduced by apocynin ( $P<0.05$ ).

**Conclusions:** High concentration of glucose and  $H_2O_2$  promote the proliferation of atrial fibroblast and the combined stimulus has more remarkable effects. Similarly to the mechanism of  $H_2O_2$ , glucose enhances the expression of fibrosis-related protein MMP 9 through up-regulating the function of NADPH oxidase and the expression and phosphorylation level of JNK 1 and p38. Apocynin, a NADPH oxidase inhibitor, can reduce the up-regulation of NADPH oxidase/MAPK/MMP 9 signal pathway and suppress the abnormal proliferation of atrial fibroblast.

#### GW25-e2527

##### Inhibition of the NF- $\kappa$ B pathway by the R65 ribozyme gene via adeno-associated virus serotype 9 in human umbilical vein endothelial cells

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**Objectives:** NF- $\kappa$ B signaling plays a central role in the regulation of inflammatory responses in atherosclerosis. To our knowledge, it is less intensively studied whether R65 ribozyme gene can decrease the expression of NF- $\kappa$ B pathway. Therefore, we used a recombinant adeno-associated virus serotype 9 vector to deliver the R65 ribozyme gene (rAVV9-R65) into oxidized LDL (ox-LDL) induced human umbilical vein endothelial cells (HUVECs). We also assessed whether rAVV9 vector-mediated R65 ribozyme gene transfection can be expressed for a longterm and inhibit the activity of NF- $\kappa$ B.

**Methods:** rAVV9-R65 was transfected into HUVECs at different multiplicities of infection, which was measured by flow cytometry. The activity of NF- $\kappa$ B pathway was analyzed by Western blot and Immunofluorescence staining. NF- $\kappa$ B inflammatory factors and endothelial cell function markers were measured by ELISA. Cell apoptosis was detected by Flow cytometry.

**Results:** The effects of the rAVV9-R65 upon ox-LDL induced injury of the HUVECs were evaluated. First, rAVV9-R65 was transfected into HUVECs at different multiplicities of infection and it could be stably and efficiently expressed. Second, ox-LDL led to concurrent increased NF- $\kappa$ B expression in a dose- and time-dependent manner, and it increased inflammatory factors (TNF- $\alpha$ , IL-6) and cell apoptosis in HUVECs. Third, over-expression of rAVV9-R65 gene could inhibit the NF- $\kappa$ B pathway and protect HUVECs against ox-LDL induced cell apoptosis.

**Conclusions:** These results demonstrate that AAV9-mediated R65 ribozyme gene transfection may inhibit the expression of NF- $\kappa$ B and consequently down-regulate the expression of downstream components of NF- $\kappa$ B and its transcription factors.

#### GW25-e3079

##### Association of coronary artery disease and Metabolic Receptors C5aR and C5L2 gene

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**Objectives:** Adipose tissue receptors C5aR and C5L2 and their heterodimerization/ functionality and interaction with ligands C5a and acylation stimulating protein (ASP) have been evaluated in cell and rodent studies. Their contribution to coronary artery disease (CAD) factors in humans remains unclear. We hypothesized that C5a receptors, classically required for host defense, are also associated with CAD.

**Methods:** Anthropometry and fasting blood parameters were measured in 492 CAD patients and 577 control subjects.

**Results:** C5L2 gene Heterozygote carriers of the CT genotype were more frequent among CAD patients than among controls (7.3% versus 1.7%). The odds ratio (OR) for carriers of the CT genotype for CAD was 4.484 (95% confidence interval (CI) : 2.197-9.174). C5aR gene Heterozygote carriers of the CT genotype were more frequent among CAD patients than among controls (4.7% versus 1.6%). The odds ratio (OR) for carriers of the 698CT genotype for CAD was 4.484 (95% confidence interval (CI) : 2.197-9.174). C5a gene Omental C5L2/C5aR ratio increased with BMI ( $P<0.01$ ) with correlations between C5L2/C5aR and waist circumference, HDL-C, and adiponectin.

**Conclusions:** Suggest relationship to The CT genotype of C5L2 and C5aR gene may be a genetic maker of CAD and highlight adipose-immune interactions.

#### GW25-e3082

##### Distributional characteristics of $\beta_3$ -adrenergic receptors gene polymorphisms and association with serum lipid in Han and Uighur populations in Xinjiang

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**Objectives:** To investigate the distributional characteristics of  $\beta_3$ -adrenergic receptors gene polymorphisms (rs2298423 and rs6986132) and association with serum lipid in Han and Uighur populations in Xinjiang.

**Methods:** The genotypes of the ADRB3 gene were detected in 362 Uighur and 653 Han healthy individuals by real-time PCR (TaqMan).

**Results:** (1) The frequencies of TT, GT and GG genotypes of the rs2298423 locus were 76.5%, 22.1% and 1.4% in the Uighurs, and 74.7%, 23.3% and 2.0% in the Hans. There was no significant difference in distribution of genotypes between the two populations ( $P=0.695$ ); (2) The frequencies of GG, AG and AA genotypes of the rs6986132 locus were 81.5%, 16.6% and 1.9% in Uighurs, and 59.6%, 33.7% and 6.7% in Hans. There was significant difference in distribution of genotypes between the two populations ( $P<0.001$ ); (3) Total cholesterol and low density lipoprotein cholesterol level were significantly higher in GG or GT genotype than in TT genotype carrier of rs2298423 in Uighur individuals, but not in Han populations. The serum lipid level which include TC, LDL-C, TG, HDL-C were no significant difference in distribution of rs6986132 genotypes between the two populations. After adjusting for gender, age, height, weight, waist circumference, blood urea nitrogen, creatinine, glucose, triglyceride, smoking, drinking, logistic regression analyses revealed that individuals carrying GG or GT genotype of rs2298423 face an increased risk for total cholesterol and low density lipoprotein cholesterol level than individuals carrying TT genotype in Uighur populations ( $OR=3.140, 95\% CI: 1.270-7.764$  in TC level,  $OR=3.818, 95\% CI: 1.761-8.280$  in LDL-C level); (4) The T-G haplotype was more frequent in the Uighur but the T-A haplotype was more common in the Han population, respectively (both  $P<0.001$ ).

**Conclusions:** The mutational frequencies of the tagging SNPs in rs2298423 and rs6986132 loci of the ADRB3 gene have obvious differences in Chinese Han and Uighur populations of Xinjiang. G allele carriers of rs2298423 face an increased risk for total cholesterol and low density lipoprotein cholesterol level in Uighur populations in Xinjiang.

#### GW25-e3085

##### Genetic polymorphisms of SAA1 and coronary artery disease risk and concentration of plasma HDL-C and SAA

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**Objectives:** Serum amyloid A protein (SAA) is not only an inflammatory factor but also an apolipoprotein that can replace apolipoprotein A1 (apoA1) as the major apolipoprotein of HDL. However, the relationship between genetic polymorphisms of SAA and coronary artery disease (CAD) remains unclear.

**Methods:** 4 Single Nucleotide Polymorphisms (rs12218, rs4638289, rs7131332, and rs11603089) of SAA gene were genotyped by use of polymerase chain reaction - restriction fragment length polymorphism (PCR - RFLP) method in two independent case-control studies: one was in the Han population (1 416 CAD patients and 1 373 control subjects) and the other was in the Uygur population (588 CAD patients and 529 control subjects).

**Results:** We found rs12218 CC genotype were more frequent among CAD patients than among controls not only in the Han population (8.3% versus 4.8%,  $P<0.001$ ) but also in the Uygur population (15.5% versus 11.3%,  $P<0.05$ ). After adjustment of confounding factors such as sex, age, smoking, drinking, hypertension, diabetes, serum levels of triglyceride, total cholesterol, high density lipoprotein, the difference remained significant in the Han group ( $P<0.001$ ,  $OR=5.906$ , 95% CI: 2.877-12.124) and in the Uygur group ( $P=0.026$ ,  $OR=3.288$ , 95% CI: 1.015-6.671).

**Conclusions:** Genetic polymorphisms of SAA1 may be a genetic maker of CAD in the Han and Uygur population in western China.

#### GW25-e3104

##### The Effects of Resveratrol on Cardioprotection of Ischemic Postconditioning in Diabetic and non-diabetic Rat Hearts

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**Objectives:** This study aimed to investigate whether acute or chronic administration of the Resveratrol (3, 5, 4'-trihydroxystilbene) affect the cardioprotective effects of ischemic postconditioning (Ipost) in diabetic and non-diabetic rat hearts.

**Methods:** Isolated rat hearts were subjected to 30 min of global ischemia, followed by 120 min of reperfusion. The hearts were subjected to the following treatments: non-conditioning, Ipost (six cycles of 10-s reperfusion-ischemia after ischemia), acute Resveratrol (10  $\mu$ M/l Resveratrol during reperfusion), acute Resveratrol with Ipost, chronic Resveratrol (10 mg/kg/day Resveratrol for 2 weeks), and chronic Resveratrol with Ipost. Infarct size, haemodynamics and expression of Akt and eNOS were examined.

**Results:** Our results show that Ipost did not limit infarct size and recover contractile dysfunction in the hearts of diabetic rats (infarct size: 58.1% and 59.2%,  $P>0.05$ ). Acute Resveratrol treatment with Ipost resulted in infarct size-limiting and contractile dysfunction-recovering effects in both diabetic and non-diabetic hearts (infarct size: 38.8% and 59.2% in diabetic ones and 24.3% and 43.7% in non-diabetic ones,  $P<0.05$ , respectively), and produced a further activation of Akt and eNOS signaling pathways to